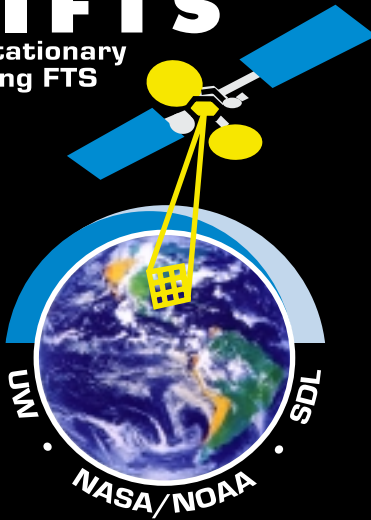


GIFTS

Geostationary
Imaging FTS



Project Manager

Wallace Harrison
NASA Langley Research Center

Measurement Concept Provider

Dr. William Smith
NASA Langley Research Center

Mission Team Organizations

ISO 9001 Certified

NASA Langley Research Center

University of Wisconsin, Space Science Engineering Center

Space Dynamics Laboratory, Utah State University

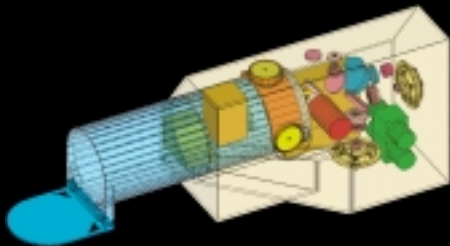
ITT Industries

National Oceanic and Atmospheric Administration (NOAA)

Massachusetts Institute of Technology, Lincoln Laboratory

Mission Statement

To space validate advanced technologies which will improve the general capability and reduce the cost of future remote sensing satellites, as well as revolutionize the observation and forecasting of weather, climate, and chemistry episodes affecting the quality of life of global mankind.



Pioneering Geoscience and Operations for the New Millennium

Measurement Capabilities

- Regional to full-disk visible and multi-spectral infrared imaging with 1- to 5-minute temporal frequency
- Full-disk temperature, moisture, and tracer wind sounding with 1- to 3-hour temporal frequency for global numerical weather prediction
- Regional half-hourly high-resolution sounding for mesoscale intense weather observation and forecasting
- Soundings of chemical composition for monitoring pollutant and greenhouse gas episode evolution and transport

Objectives

Technology

- Validate highly advanced technologies which enable improved remote sensing and new, low cost science missions in geostationary orbits.
 - Fourier transform spectrometer (FTS)
 - Large area format focal plane array (LFPA)
 - Data readout and digital signal processing electronics
 - Radiation shielding
 - Lightweight structures and optics
 - Redundant miniature cryogenic coolers

Science

- Measure temperature, water vapor, tracer wind, and chemical composition distribution with high spatial and temporal resolution for revolutionary improvements in operational weather observation, prediction, and air quality monitoring.
- Provide dynamic observations of cloud spectral radiance and associated atmospheric properties in support of ESE missions.
- Observe the transport of radiatively active pollutant and greenhouse gases in support of the EOS-CHEM mission.

Spacecraft and Launch

Secondary Payload on Geostationary Communications Satellite

Outreach

Enable the international community of elementary and middle schools to actively participate in the Earth Observing System by validating high spatial-resolution water vapor observations with low cost hand-held bi-spectral sun photometers.

NASA Mission Cost (total, including reserves)

\$103.6M

Fiscal Year	2000	2001	2002	2003	2004	2005
Phase	Instrument design/development			Launch	Technical/ concept eval ops	Pre-operational mission
	New Millennium EO-3				Unfunded options	